

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claims 1-42 : (Canceled)

Claim 43 : (Currently Amended) An optical communication system, comprising:

a) a first optical path for guiding information-bearing, first optical radiation partitioned into a plurality of wavebands;

b) a second optical path for guiding information-bearing, second optical radiation partitioned into the same plurality of wavebands; and

c) switchable interfacing means for selectively communicating at least one component of the first radiation corresponding to a selected waveband from the first path to the second path, the interfacing means including

i) switchable waveband selective diverting means in the first path, for selecting and diverting said at least one component of the first radiation corresponding to said selected waveband from the first path to an entry point in the second path for guidance away from the entry point along the second path,

ii) switchable waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point, the coupling means including waveband selective filtering means for spatially separating

components of the first radiation, and liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said selected waveband to the entry point, and

iii) switchable waveband selective attenuating means in the second path upstream of the entry point, for selectively blocking at least one component of the second radiation corresponding to said selected waveband coupled at the entry point.

Claim 44 : (Canceled)

Claim 45 : (Currently Amended) The system of claim 43, wherein the diverting means includes waveband selective filtering means for spatially separating components of the first radiation; and wherein the diverting means also includes liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said selected waveband.

Claim 46 : (Canceled)

Claim 47 : (Currently Amended) The system of claim 43, wherein the attenuating means includes waveband selective filtering means for spatially separating components of the second radiation; and wherein the attenuating means also includes liquid crystal attenuating means associated with each component of the second radiation for selectively transmitting or diverting the components of the second radiation relative to the second path.

Claim 48 : (Previously Presented) The system of claim 43, wherein the diverting means, the attenuating means and the coupling means operate on the optical radiation in the optical domain.

Claim 49 : (Previously Presented) The system of claim 43, wherein the coupling means includes waveband switching means for transferring information conveyed on a first set of components of the radiation diverted by the diverting means to a second set of components for guidance along the second path, the first set and the second set having different wavebands.

Claim 50 : (Previously Presented) The system of claim 49, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, detecting means for converting the isolated component into an electrical signal, and an optical radiation source modulated by the signal for generating radiation bearing the signal at a waveband different from the selected waveband for guidance along the second path.

Claim 51 : (Previously Presented) The system of claim 49, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, and an optical radiation source biased substantially at its lasing threshold and stimulated by the isolated component, for generating a stimulated component modulated by information carried by the isolated component at a waveband different from the selected waveband for guidance along the second path.

Claim 52 : (Previously Presented) The system of claim 43, wherein the coupling means includes regenerating means for regenerating the radiation guided therethrough.

Claim 53 : (Currently Amended) The system of claim 43, wherein each path is operative for ~~bidirectionally~~ guiding the respective radiation therealong, and wherein the interfacing means is operative for communicating said at least one component ~~guided in either~~

~~direction of the first path for guidance along either direction of~~ in one of the first path and the second path.

Claim 54 : (Previously Presented) The system of claim 43, wherein each path includes a plurality of subpaths.

Claim 55 : (Currently Amended) The system of claim 43, wherein each path is operative for ~~bidirectionally~~ guiding the respective radiation therealong, and wherein the interfacing means is operative for communicating said at least one component ~~guided~~ in one ~~direction of the first path for guidance along an opposite direction of~~ and the second path.

Claim 56 : (Currently Amended) A switchable interface for an optical communication system having a first optical path for guiding information-bearing, first optical radiation partitioned into a plurality of wavebands, and a second optical path for guiding information-bearing, second optical radiation partitioned into the same plurality of wavebands, the interface being operative for selectively communicating at least one component of the first radiation corresponding to a selected waveband from the first path to the second path, the interface comprising:

a) switchable waveband selective diverting means in the first path, for selecting and diverting said at least one component of the first radiation corresponding to said selected waveband from the first path to an entry point in the second path for guidance away from the entry point along the second path,

b) switchable waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point, the coupling means including waveband selective filtering means for spatially separating

components of the first radiation, and liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said selected waveband to the entry point, and

c) switchable waveband selective attenuating means in the second path upstream of the entry point, for selectively blocking at least one component of the second radiation corresponding to said selected waveband coupled at the entry point.

Claim 57 : (Canceled)

Claim 58 : (Currently Amended) The interface of claim 56, wherein the diverting means includes waveband selective filtering means for spatially separating components of the first radiation; and wherein the diverting means also includes liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said selected waveband.

Claim 59 : (Canceled)

Claim 60 : (Currently Amended) The interface of claim 56, wherein the attenuating means includes waveband selective filtering means for spatially separating components of the second radiation; and wherein the attenuating means also includes liquid crystal attenuating means associated with each component of the second radiation for selectively transmitting or diverting the components of the second radiation relative to the second path.

Claim 61 : (Previously Presented) The interface of claim 56, wherein the diverting means, the attenuating means and the coupling means operate on the optical radiation in the optical domain.

Claim 62 : (Previously Presented) The interface of claim 56, wherein the coupling means includes waveband switching means for transferring information conveyed on a first set of components of the radiation diverted by the diverting means to a second set of components for guidance along the second path, the first set and the second set having different wavebands.

Claim 63 : (Previously Presented) The interface of claim 62, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, detecting means for converting the isolated component into an electrical signal, and an optical radiation source modulated by the signal for generating radiation bearing the signal at a waveband different from the selected waveband for guidance along the second path.

Claim 64 : (Previously Presented) The interface of claim 62, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, and an optical radiation source biased substantially at its lasing threshold and stimulated by the isolated component, for generating a stimulated component modulated by information carried by the isolated component at a waveband different from the selected waveband for guidance along the second path.

Claim 65 : (Previously Presented) The interface of claim 56, wherein the coupling means includes regenerating means for regenerating the radiation guided therethrough.

Claim 66 : (Currently Amended) The interface of claim 56, wherein each path is operative for ~~bidirectionally~~ guiding the respective radiation therealong, and

wherein the interface is operative for communicating said at least one component ~~guided in either direction of the first path for guidance along either direction of~~ in one of the first path and the second path.

Claim 67 : (Previously Presented) The interface of claim 56, wherein each path includes a plurality of subpaths.

Claim 68 : (Currently Amended) The interface of claim 56, wherein each path is operative for ~~bidirectionally~~ guiding the respective radiation therealong, and wherein the interface is operative for communicating said at least one component ~~guided~~ in one ~~direction of the first path for guidance along an opposite direction of~~ and the second path.